WHAT IS CLAIMED IS:

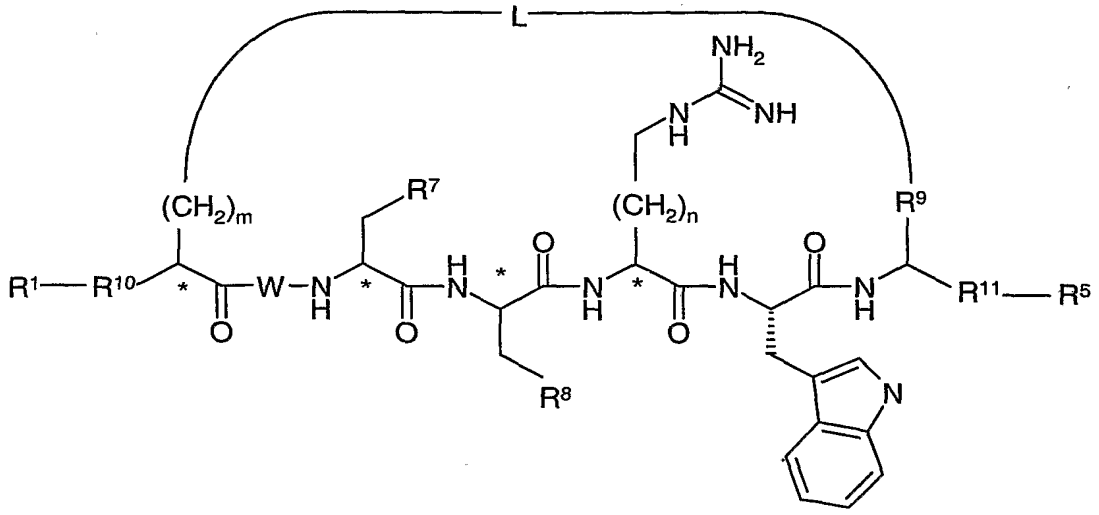
1. A method of inducing weight loss in a patient, comprising administering by continuous infusion an effective amount of an MC4R agonist peptide to a patient in need thereof.

2. A method for treating obesity in a patient, comprising administering by continuous infusion an effective amount of an MC4R agonist peptide to a patient in need thereof.

3. The method of any one of Claims 1 to 2, wherein the MC4R agonist peptide is administered using a pump.

4. The method of any one of Claims 1 to 2, wherein the MC4R agonist peptide is administered using a depot.

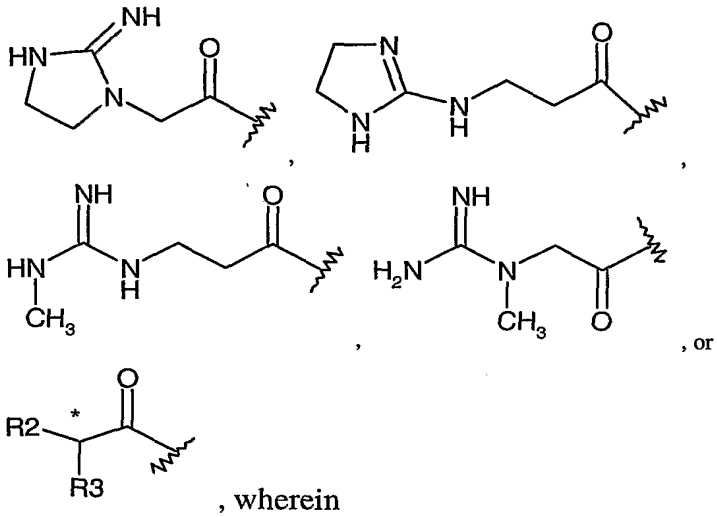
5. The method of any one of Claims 1 to 4, wherein the MC4R agonist peptide is a peptide of the formula:



and pharmaceutically acceptable salts thereof, wherein

W is Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, Phe, Lys, Leu, Cya, or is absent;

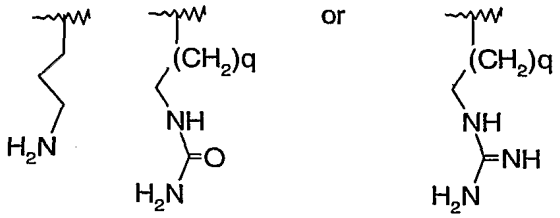
R^1 is -H, $-C(O)CH_3$, $-C(O)(CH_2)_{1-4}CH_3$, $-C(O)(CH_2)_{1-4}NHC(NH)NH_2$, Tyr-βArg-, Ac-Tyr-β-hArg-, gluconoyl-Tyr-Arg-, Ac-diaminobutyryl-, Ac-diaminopropionyl-, N-propionyl-, N-butyryl-, N-valeryl-, N-methyl-Tyr-Arg-, N-glutaryl-Tyr-Arg-, N-succinyl-Tyr-Arg-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$Arg-, R^6-$SO_2NHCH_2CH_2CH_2C(O)$-, C_3-C_7 cycloalkylcarbonyl, phenylsulfonyl, C_8-C_{14} bicyclic arylsulfonyl, phenyl-$(CH_2)_qC(O)$-, C_8-C_{14} bicyclic aryl-$(CH_2)_qC(O)$-,



, wherein

R^2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1-4}CH_3$, –NH-TyrC(O)CH_3, R^6SO_2NH-, Ac-Cya-NH-, Tyr-NH-, HO-(C_6H_5)-$CH_2CH_2C(O)NH$-, or CH_3-(C_6H_5)-$C(O)CH_2CH_2C(O)NH$-;

R^3 is C_1-C_4 straight or branched alkyl, NH_2-CH_2-$(CH_2)_q$-, HO-CH_2-, $(CH_3)_2CHNH(CH_2)_4$-, $R^6(CH_2)_q$-, R^6SO_2NH-, Ser, Ile,



;

q is 0, 1, 2, or 3;

R^6 is a phenyl or C_8-C_{14} bicyclic aryl;

m is 1 or 2;

n is 1, 2, 3, or 4;

R^9 is $(CH_2)_p$ or $(CH_3)_2C$-;

p is 1 or 2;

R^{10} is NH- or is absent;

R^7 is a 5- or 6-membered heteroaryl or a 5- or 6-membered heteroaryl ring optionally substituted with R^4;

R^4 is H, C_1-C_4 straight or branched alkyl, phenyl, benzyl, or (C_6H_5)-CH_2-O-CH_2-;

R^8 is phenyl, a phenyl ring optionally substituted with X, or cyclohexyl;

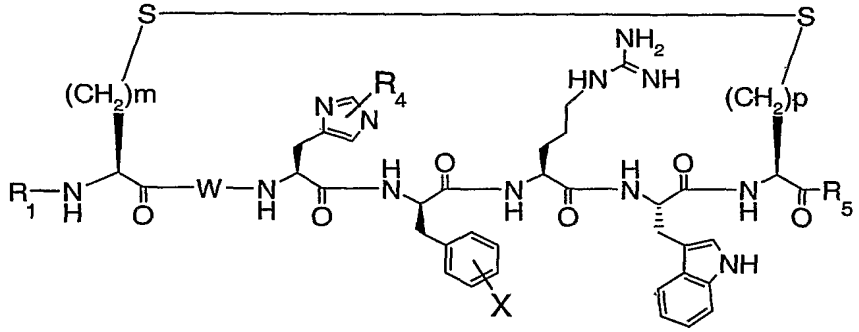
X is H, Cl, F, Br, methyl, or methoxy;

R^{11} is -C(O) or -CH_2;

R^5 is -NH_2, -OH, glycinol, NH_2-Pro-Ser-, NH_2-Pro-Lys-, HO-Ser-, HO-Pro-Ser-, HO-Lys-, -Ser alcohol, -Ser-Pro alcohol, -Lys-Pro alcohol, $HOCH_2CH_2$-O-CH_2CH_2NH-, NH_2-Phe-Arg-, NH_2-Glu-, $NH_2CH_2RCH_2NH$-, RHN-, or RO- where R is a C_1-C_4 straight or branched alkyl; and

L is –S-S- or –S-CH_2-S-.

6. The method of any one of Claims 1 to 4, wherein the MC4R agonist peptide is a peptide of the formula:

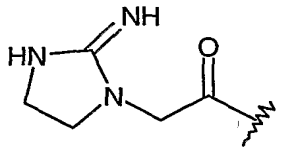


and pharmaceutically acceptable salts thereof, wherein

W is Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, Phe, Lys, Leu, Cya, or is absent;

R^1 is -H, -C(O)CH_3, -C(O)$(CH_2)_{1-4}CH_3$, -C(O)$(CH_2)_{1-4}NHC(NH)NH_2$, Tyr-βArg-, Ac-Tyr-β-hArg-, gluconoyl-Tyr-Arg-, Ac-diaminobutyryl-,

Ac-diaminopropionyl-, N-propionyl-, N-butyryl-, N-valeryl-, N-methyl-Tyr-Arg-, N-glutaryl-Tyr-Arg-, N-succinyl-Tyr-Arg-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$-, R^6-$SO_2NHC(O)CH_2CH_2C(O)Arg$-, R^6-$SO_2NHCH_2CH_2CH_2C(O)$-, C_3-C_7 cycloalkylcarbonyl, phenylsulfonyl, C_8-C_{14} bicyclic arylsulfonyl, phenyl-$(CH_2)_qC(O)$-, C_8-C_{14} bicyclic aryl-$(CH_2)_qC(O)$-,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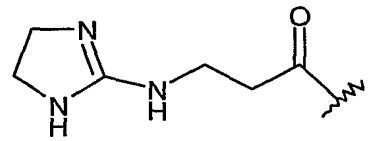
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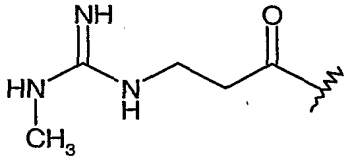
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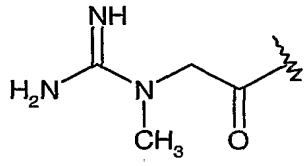
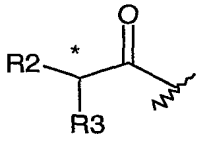
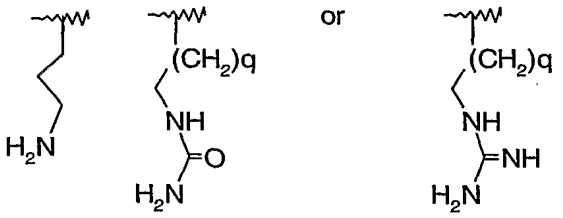

, or


, wherein

R^2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1\text{-}4}CH_3$, –NH-TyrC(O)$CH_3$, R^6SO_2NH-, Ac-Cya-NH-, Tyr-NH-, HO-(C_6H_5)-$CH_2CH_2C(O)NH$-, or CH_3-(C_6H_5)-$C(O)CH_2CH_2C(O)NH$-;

R^3 is C_1-C_4 straight or branched alkyl, NH_2-CH_2-$(CH_2)_q$-, HO-CH_2-, $(CH_3)_2CHNH(CH_2)_4$-, $R^6(CH_2)_q$-, R^6SO_2NH-, Ser, Ile,


;

q is 0, 1, 2, or 3;

R^6 is a phenyl or C_8-C_{14} bicyclic aryl;

m is 1 or 2;

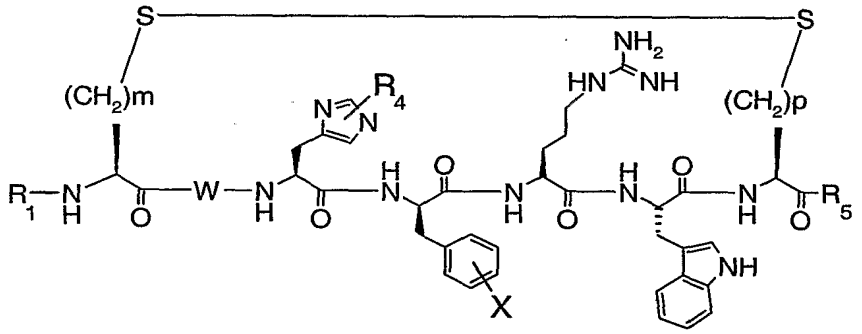
p is 1 or 2;

R^4 is H, C_1-C_4 straight or branched alkyl, phenyl, benzyl, or (C_6H_5)-CH_2-O-CH_2-;

X is H, Cl, F, Br, methyl, or methoxy; and

R^5 is -NH_2, -OH, glycinol, NH_2-Pro-Ser-, NH_2-Pro-Lys, HO-Ser-, HO-Pro-Ser-, HO-Lys-, -Ser alcohol, -Ser-Pro alcohol, -Lys-Pro alcohol, $HOCH_2CH_2$-O-CH_2CH_2NH-, NH_2-Phe-Arg-, NH_2-Glu-, $NH_2CH_2RCH_2NH$-, RHN-, or RO- where R is a C_1-C_4 straight or branched alkyl.

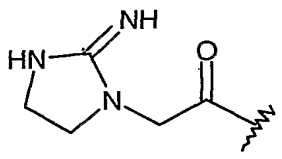
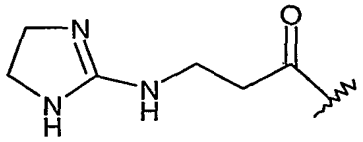
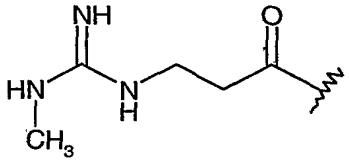
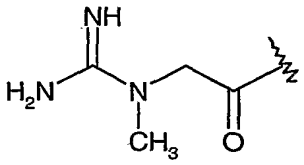
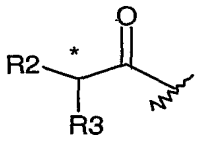
7. The method of any one of Claims 1 to 4, wherein the MC4R agonist peptide is a peptide of the formula:



and pharmaceutically acceptable salts thereof, wherein

W is a single bond, Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, or Phe;

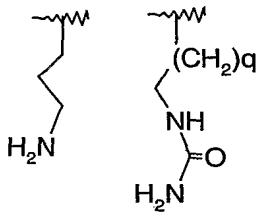
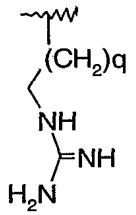
R_1 is -H, -C(O)CH_3, -C(O)$(CH_2)_{1-4}$NH-C(NH)NH_2, Tyr-βArg, gluconoyl-Tyr-Arg, Ac-Dab, Ac-Dap, N-succinyl-Tyr-Arg, N-propionyl, N-valeryl, N-glutaryl-Tyr-Arg, N-butyryl,

, wherein

R_2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1-4}CH_3$, Tyr, or -NH-Tyr-$C(O)CH_3$;

R_3 is C_1-C_4 straight or branched alkyl, Ser, Ile, Arg,


and

;

q is 0, 1, 2, or 3;

m is 1 or 2;

p is 1 or 2;

R_4 is -H, $-CH_3$, or $-(CH_2)_{1-3}(CH_3)$;

X is -H, -Cl, -F, -Br, methyl, or methoxy; and

R_5 is $-NH_2$, -OH, glycinol, -Ser-Pro-NH_2, -Lys-Pro-NH_2, -Ser-OH, -Ser-Pro-OH, -Lys-Pro-OH, -Arg-Phe-NH_2, -GluNH_2, -NHR, or -OR, where R is $-CH_3$ or $-(CH_2)_{1-3}(CH_3)$.

8. The method of any one of Claims 1 to 4, wherein the MC4R agonist peptide is cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-NH_2,

Ac-cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-NH_2,

Arg-cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-OH,

Ac-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2, or
Ac-D-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2.

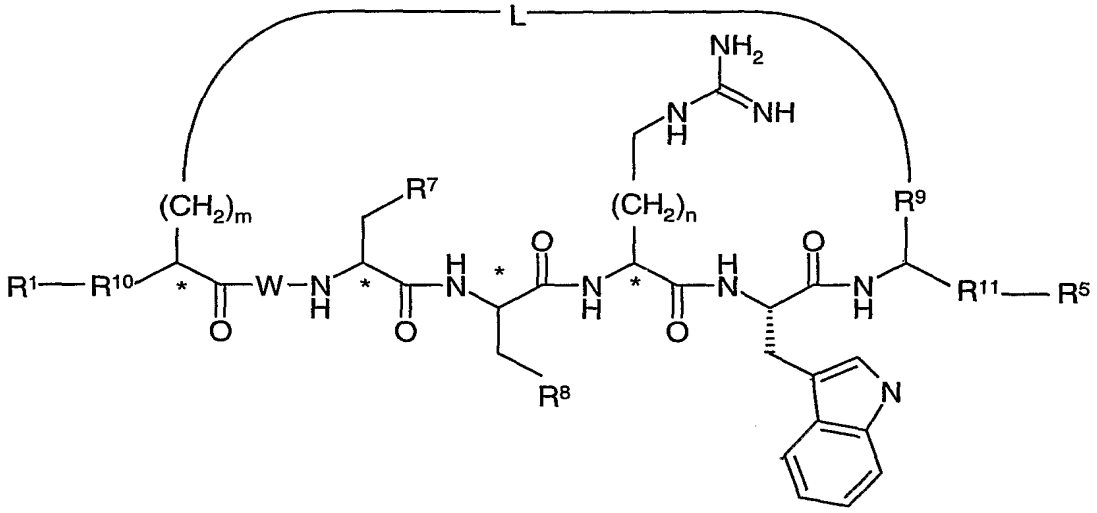
9. The method of any one of Claims 1 to 4, wherein the MC4R agonist peptide is Ac-D-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2.

10. Use of an MC4R agonist peptide for the manufacture of a medicament for the treatment of obesity, wherein the medicament is administered by continuous infusion.

11. The use of Claim 10, wherein the medicament is administered using a pump.

12. The use of Claim 10, wherein the medicament is administered using a depot.

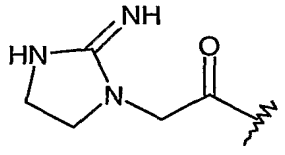
13. The use according to any one of Claims 10 to 12, wherein the MC4R agonist peptide is a peptide of the formula:



and pharmaceutically acceptable salts thereof, wherein

W is Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, Phe, Lys, Leu, Cya, or is absent;

R^1 is -H, $-C(O)CH_3$, $-C(O)(CH_2)_{1-4}CH_3$, $-C(O)(CH_2)_{1-4}NHC(NH)NH_2$, Tyr-βArg-, Ac-Tyr-β-hArg-, gluconoyl-Tyr-Arg-, Ac-diaminobutyryl-, Ac-diaminopropionyl-, N-propionyl-, N-butyryl-, N-valeryl-, N-methyl-Tyr-Arg-, N-glutaryl-Tyr-Arg-, N-succinyl-Tyr-Arg-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$Arg-, R^6-$SO_2NHCH_2CH_2CH_2C(O)$-, C_3-C_7 cycloalkylcarbonyl, phenylsulfonyl, C_8-C_{14} bicyclic arylsulfonyl, phenyl-$(CH_2)_qC(O)$-, C_8-C_{14} bicyclic aryl-$(CH_2)_qC(O)$-,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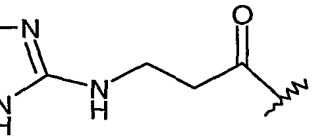
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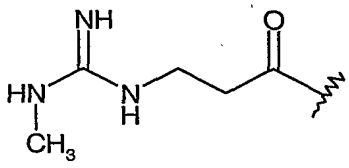
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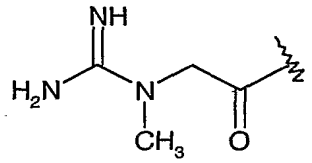
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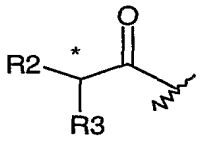
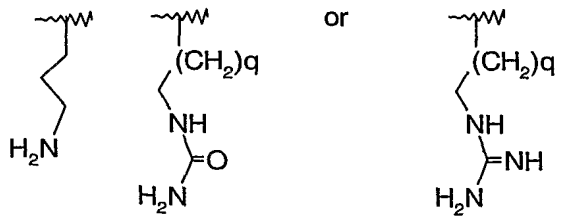

, wherein

R^2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1-4}CH_3$, –NH-TyrC(O)CH_3, R^6SO_2NH-, Ac-Cya-NH-, Tyr-NH-, HO-(C_6H_5)-$CH_2CH_2C(O)NH$-, or CH_3-(C_6H_5)-$C(O)CH_2CH_2C(O)NH$-;

R^3 is C_1-C_4 straight or branched alkyl, NH_2-CH_2-$(CH_2)_q$-, HO-CH_2-, $(CH_3)_2CHNH(CH_2)_4$-, $R^6(CH_2)_q$-, R^6SO_2NH-, Ser, Ile,


;

q is 0, 1, 2, or 3;

R^6 is a phenyl or C_8-C_{14} bicyclic aryl;

m is 1 or 2;

n is 1, 2, 3, or 4;

R^9 is $(CH_2)_p$ or $(CH_3)_2C$-;

p is 1 or 2;

R^{10} is NH- or is absent;

R^7 is a 5- or 6-membered heteroaryl or a 5- or 6-membered heteroaryl ring optionally substituted with R^4;

R^4 is H, C_1-C_4 straight or branched alkyl, phenyl, benzyl, or (C_6H_5)-CH_2-O-CH_2-;

R^8 is phenyl, a phenyl ring optionally substituted with X, or cyclohexyl;

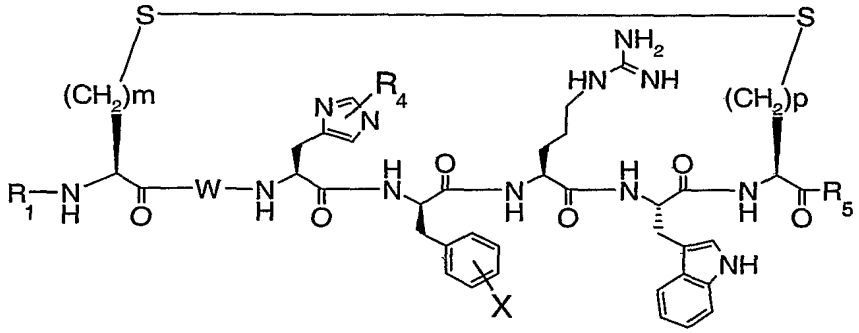
X is H, Cl, F, Br, methyl, or methoxy;

R^{11} is -C(O) or -CH_2;

R^5 is -NH_2, -OH, glycinol, NH_2-Pro-Ser-, NH_2-Pro-Lys-, HO-Ser-, HO-Pro-Ser-, HO-Lys-, -Ser alcohol, -Ser-Pro alcohol, -Lys-Pro alcohol, $HOCH_2CH_2$-O-CH_2CH_2NH-, NH_2-Phe-Arg-, NH_2-Glu-, $NH_2CH_2RCH_2NH$-, RHN-, or RO- where R is a C_1-C_4 straight or branched alkyl; and

L is –S-S- or –S-CH_2-S-.

14. The use according to any one of Claims 10 to 12, wherein the MC4R agonist peptide is a peptide of the formula:

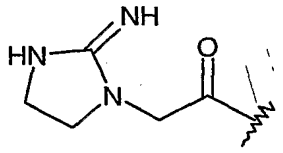


and pharmaceutically acceptable salts thereof, wherein

W is Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, Phe, Lys, Leu, Cya, or is absent;

R^1 is -H, -C(O)CH_3, -C(O)$(CH_2)_{1\text{-}4}CH_3$, -C(O)$(CH_2)_{1\text{-}4}$NHC(NH)NH_2, Tyr-βArg-, Ac-Tyr-β-hArg-, gluconoyl-Tyr-Arg-, Ac-diaminobutyryl-,

Ac-diaminopropionyl-, N-propionyl-, N-butyryl-, N-valeryl-, N-methyl-Tyr-Arg-, N-glutaryl-Tyr-Arg-, N-succinyl-Tyr-Arg-, R^6-$SO_2NHC(O)CH_2CH_2C(O)$-, R^6-$SO_2NHC(O)CH_2CH_2C(O)Arg$-, R^6-$SO_2NHCH_2CH_2CH_2C(O)$-, C_3-C_7 cycloalkylcarbonyl, phenylsulfonyl, C_8-C_{14} bicyclic arylsulfonyl, phenyl-$(CH_2)_qC(O)$-, C_8-C_{14} bicyclic aryl-$(CH_2)_qC(O)$-,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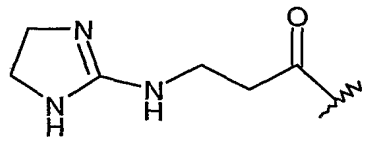
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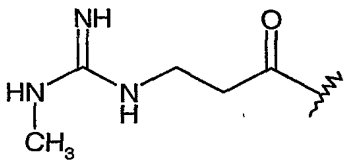
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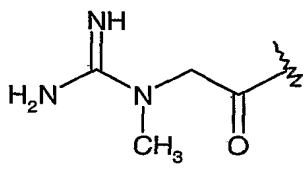
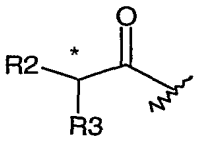
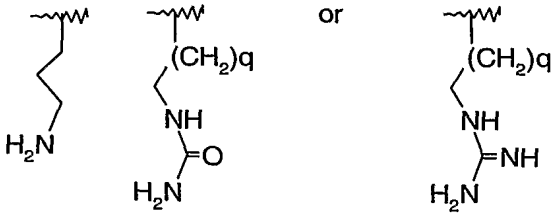

, or

, wherein

R^2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1-4}CH_3$, –NH-TyrC(O)CH_3, R^6SO_2NH-, Ac-Cya-NH-, Tyr-NH-, HO-(C_6H_5)-$CH_2CH_2C(O)NH$-, or CH_3-(C_6H_5)-$C(O)CH_2CH_2C(O)NH$-;

R^3 is C_1-C_4 straight or branched alkyl, NH_2-CH_2-$(CH_2)_q$-, HO-CH_2-, $(CH_3)_2CHNH(CH_2)_4$-, $R^6(CH_2)_q$-, R^6SO_2NH-, Ser, Ile,


;

q is 0, 1, 2, or 3;

R^6 is a phenyl or C_8-C_{14} bicyclic aryl;

m is 1 or 2;

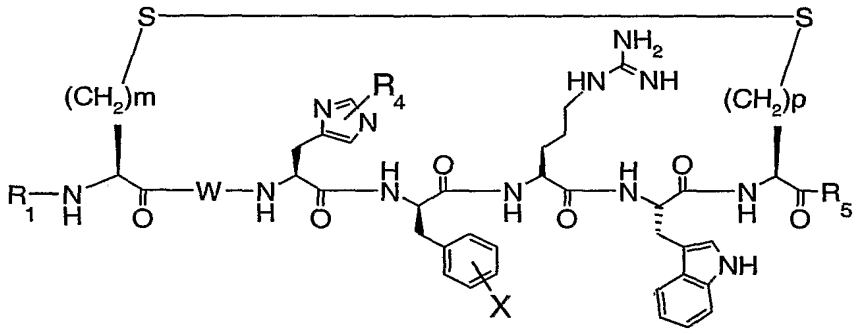
p is 1 or 2;

R^4 is H, C_1-C_4 straight or branched alkyl, phenyl, benzyl, or (C_6H_5)-CH_2-O-CH_2-;

X is H, Cl, F, Br, methyl, or methoxy; and

R^5 is -NH_2, -OH, glycinol, NH_2-Pro-Ser-, NH_2-Pro-Lys, HO-Ser-, HO-Pro-Ser-, HO-Lys-, -Ser alcohol, -Ser-Pro alcohol, -Lys-Pro alcohol, $HOCH_2CH_2$-O-CH_2CH_2NH-, NH_2-Phe-Arg-, NH_2-Glu-, $NH_2CH_2RCH_2NH$-, RHN-, or RO- where R is a C_1-C_4 straight or branched alkyl.

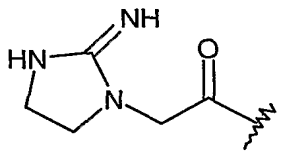
15. The use according to any one of Claims 10 to 12, wherein the MC4R agonist peptide is a peptide of the formula:



and pharmaceutically acceptable salts thereof, wherein

W is a single bond, Glu, Gln, Asp, Asn, Ala, Gly, Thr, Ser, Pro, Met, Ile, Val, Arg, His, Tyr, Trp, or Phe;

R_1 is -H, -C(O)CH_3, -C(O)$(CH_2)_{1-4}$NH-C(NH)NH_2, Tyr-βArg, gluconoyl-Tyr-Arg, Ac-Dab, Ac-Dap, N-succinyl-Tyr-Arg, N-propionyl, N-valeryl, N-glutaryl-Tyr-Arg, N-butyryl,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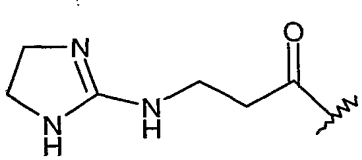
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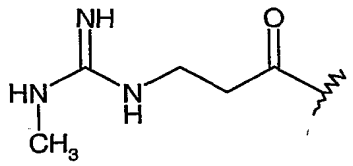
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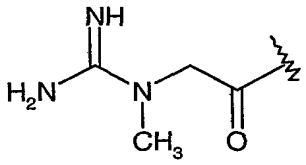
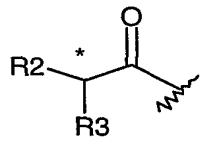
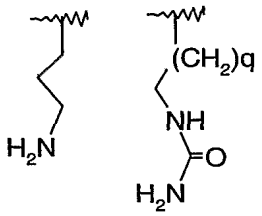
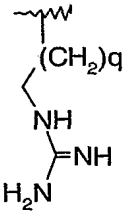

, or

, wherein

R_2 is -H, $-NH_2$, $-NHC(O)CH_3$, $-NHC(O)(CH_2)_{1-4}CH_3$, Tyr, or -NH-Tyr-$C(O)CH_3$;

R_3 is C_1-C_4 straight or branched alkyl, Ser, Ile, Arg,


and

;

q is 0, 1, 2, or 3;

m is 1 or 2;

p is 1 or 2;

R_4 is -H, $-CH_3$, or $-(CH_2)_{1-3}(CH_3)$;

X is -H, -Cl, -F, -Br, methyl, or methoxy; and

R_5 is $-NH_2$, -OH, glycinol, -Ser-Pro-NH_2, -Lys-Pro-NH_2, -Ser-OH, -Ser-Pro-OH, -Lys-Pro-OH, -Arg-Phe-NH_2, -GluNH_2, -NHR, or -OR, where R is $-CH_3$ or $-(CH_2)_{1-3}(CH_3)$.

16. The use according to any one of Claims 10 to 12, wherein the MC4R agonist peptide is cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-NH_2,

Ac-cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-NH_2,

Arg-cyclo[hCys-His-D-Phe-Arg-Trp-Cys]-OH,

Ac-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2, or
Ac-D-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2.

17. The use according to any one of Claims 10 to 12, wherein the MC4R agonist peptide is Ac-D-Arg-cyclo[Cys-Glu-His-D-Phe-Arg-Trp-Cys]-NH_2.